

THERAPEUTICS.

UNDER THE CHARGE OF

SAMUEL W. LAMBERT, M.D.,

PROFESSOR OF APPLIED THERAPEUTICS IN THE COLLEGE OF PHYSICIANS AND SURGEONS,
COLUMBIA UNIVERSITY, NEW YORK.

The Action of Intravenous Injections of Strophanthin in Heart Disease.—DANIEL POLU (*Archiv. d. mal. d. cœur.*, 1908, xi, 609) has given intravenous injections of strophanthin in 23 cases of heart disease with very encouraging results. He believes that strophanthin is one of the best heart stimulants, not only because of the rapidity with which it acts, but also because of the possibility for securing accurate dosage and because its action is exerted exclusively upon the heart. He used 0.001 gram ($\frac{1}{1000}$ grain) of the strophanthin, repeating the dose at intervals of twenty-four hours, for several days if necessary. As a rule, one or two injections were all that was necessary. It acts more rapidly than any other known heart stimulant, he says, increasing the force of the contractions, slowing the pulse, raising the arterial tension, and increasing the amount of the urine notably. Consequently the oedema and the passive congestion of the viscera soon subsided. These effects were especially marked when there was no advanced kidney lesion. When the kidneys are markedly deficient, strophanthin is useless unless combined with diuretics. In a few cases good results were obtained by the combined administration of theobromin by mouth and strophanthin intravenously. For this reason he believes, with Lust and Hoepffner, that the injection of strophanthin may serve to differentiate whether the trouble is a primary cardiac failure or heart failure secondary to an advanced nephritis. He had no complications, such as fever or chills, after the intravenous use of strophanthin, and believes that they can be avoided by strict asepsis.

The Treatment of Degeneration of the Myocardium with Intravenous Injections of Strophanthin.—FLESCH (*Wien. klin. Woch.*, 1908, xvi, 1590) reports only a single case, but the benefit was so striking after the failure of all other heart stimulants and diuretics that he cannot refrain from attributing some credit to the strophanthin. He used 0.001 gram intravenously at intervals of two or three days. He was able by this treatment to keep his patient in good condition for months.

Atropine in the Treatment of Bronchial Asthma.—TERRAY (*Med. Klinik.*, 1909, iii, 79) speaks for the wider use of atropine in the treatment of bronchial asthma. He believes it exceedingly valuable for certain cases, especially those with a marked neurotic element. Terray cites the histories of seven severe cases of bronchial asthma treated by atropine with very encouraging results. In one of these cases he not only succeeded in arresting the acute attacks, but the patient was so much improved that there was no recurrence of attacks for ten months.

Previously, this patient had been constantly affected for twenty years. He prescribes atropine in pills, each pill containing 0.0005 gram ($\frac{1}{100}$ grain). He gives one pill a day at first, then, after two or three days, gradually increases the dose to a total of from four to six pills a day. When this amount has been reached, he gradually reduces the amount to one pill a day. Terray believes that atropine not only will arrest an attack, but it also will prevent a recurrence. One great advantage is that atropine can be advantageously used as a substitute for morphine or may be alternated with morphine.

The Limitations of the Treatment of Neuralgia by Injection.—SCHLESINGER (*Med. Klinik.*, 1908, xlix, 1868) has been using physiological salt solution just below the freezing point for the local treatment of neuralgia. The advantages of the chilled solution are the small volume of the injection and the immediate relief to the pain, which is most encouraging to the patient. He cites sciatica as a type of painful nerve affection in which many observers have reported beneficial effects from the injection therapy. He believes that many cases of sciatica which have been reported as cured or benefitted by the injection treatment are of questionable diagnosis. He insists that an accurate diagnosis is essential, and believes that all cases of acute sciatica and the majority of the chronic cases do not improve under the injection treatment. Such cases should be treated by rest in bed, quinine in small doses, and galvanization. The latter should not be begun too early. Schlesinger gives the distinguishing features of true sciatica, and also calls attention to the fact that sciatica may be a gouty manifestation and yield to appropriate treatment for gout.

Furthermore, he believes that intraneural injections are dangerous for mixed nerves like the sciatic. He has seen paralysis result from such an injection. Schlesinger describes an affection which he considers different in many ways from true sciatica and which is very amenable to injection therapy. This begins gradually with a little sensitiveness in the hip, vague drawing sensations which only gradually develop into intense pain, whereas sciatica, as a rule, develops suddenly. Furthermore, this non-sciatic pain does not follow the course of the sciatic nerve, but spreads over the surface from the crest of the ileum to the spine. This pain area may be as large as the palm of the hand, and the overlying skin is always hyperesthetic to a greater or less degree. This group of symptoms differs considerably from sciatica, in which complaint the skin is usually less sensitive than normal. Furthermore, these areas are not innervated by the sciatic nerve. He believes that this trouble is due to a neuritis of the smaller nerve fibers in the muscles, and that the pain is produced by traction upon the periosteum by the contraction of the muscle bundles. The localization of the most painful area at the crest of the ileum at the insertion of the muscle can be thus explained. This affection can be cured by the injection of any of the different solutions advised for the purpose, such as the injection of 50 to 100 c.c. of an 8 per cent. salt solution with a little cocaine, the Lange technique; the injection of the same solution at different points, the Peritz technique; the injection of 10 c.c. of Schleich's solution, Alexander's method; or by the injection of 10 c.c. of salt solution just below freezing point, which is Schlesinger's method. Schlesinger

condemns the use of alcohol injections as too dangerous. He says that even with the best technique the nerve is often missed. The sharp lightning pain is not an absolute indication of the entrance of the needle into the nerve, since the needle may strike the periosteum and give rise to similar pain. The abundant work done with nerve injections, Schlesinger says, has brought out two main facts. The first is that the beneficial effects of the injections are often very uncertain. The second is the deficient knowledge of the anatomical causes of neuralgic pain.

Use of Alkalies in Practical Medicine.—SMITH (*Brit. Med. Jour.*, 1909, i, 263) enumerates the various uses of the alkalies, especially their action in modifying the digestive functions. He believes that they must be used with discretion, for appropriate conditions, and on a definite plan. They should be used only in moderate doses, and should be immediately discontinued when their administration shows no definite beneficial effects. The alkalies have a local action on the stomach and intestinal tract, which, Smith believes, is due more to their influence in restoring the deranged functions of the gastric mucosa in catarrhal conditions than to their chemical action upon the gastric secretion. Besides this local action, Smith ascribes to the alkalies a more general effect upon the body metabolism.

In gastric disturbances, sodium and potassium bicarbonate seem to be equally good. Smith believes that the action of the alkalies is enhanced by the addition of a few grains of sodium chloride to each dose. If the stomach is very irritable, the alkalies should be made to effervesce with citric acid. The caustic alkalies—liquor potassæ and liquor sodæ—have a more marked sedative action upon the stomach than the bicarbonates. The heavy carbonates of magnesium or calcium carbonate are often useful. Smith advises the use of the insoluble alkalies for the purpose of neutralizing acid formed in the cecum. He thinks these are likely to pass unaltered through the stomach and reach the lower bowel unchanged. Smith also discusses the use of alkalies in the treatment of urinary acidity, in urinary sand or gravel, and in suppression of urine. He speaks of the beneficial effects in viscid bronchitis and of the value of sodium citrate in infant feeding.

Antibacterial or Antitoxic Immunization in Tuberculin Treatment.—TRUDEAU (*Jour. Amer. Med. Assoc.*, 1909, iv, 261) discusses the two widely differing theories of the mode of action of tuberculin therapy. One of these is the "vaccination" theory, which claims, as a result of the tuberculin treatment, a greater or less degree of a specific immunity to the tubercle bacillus itself. The "toxin immunization" theory holds that there results an immunity to the toxin of the tubercle bacillus. Trudeau believes that until more accurate knowledge is obtained of the mode of action of tuberculin, opinions will differ as to the best method to be employed. He also believes that neither theory is entirely satisfactory. He says that the production of a general antibacterial immunity is not supported by experimental evidence. On the other hand, in cases of purely localized tuberculous disease, in which the general health is unimpaired and there is no evidence of chronic toxemia, the use of tuberculin is often attended with good results. It is evident that this

result is not caused by an antitoxic action, though it may be due to many imperceptible focal reactions and not to a general specific immunity. For a working theory Trudeau prefers the conception of the production of an immunity that is principally antitoxic.

Trudeau concludes as follows: If we accept the toxin immunization conception as the essential feature and guide to the treatment, instead of measuring the degree of a questionable antibacterial immunity by the opsonic index, or attempting to produce it more or less empirically by a series of moderate reactions, the severity of which we cannot in any way control, the main features in our treatment would be: (1) To raise the degree of tolerance to tuberculin to the highest point attainable in each case by an almost imperceptible and long-continued progression in dosage. (2) To avoid general and focal reactions as much as possible and consider them merely as evidences of intolerance. (3) To follow no arbitrary rule as to rate of increase or the maximum dose to be reached, but to be guided merely by the degree of toxin tolerance of each patient as shown by the symptoms and general condition, whether the highest individual maximum dose attainable be only a small fraction of a milligram or a cubic centimeter or more.

The Treatment of Bronchial Affections by Raising the Foot of the Bed.—SCHÄFER (*Deutsch. Archiv. f. klin. Med.*, 1909, iii, iv, 376) gives a report of 29 cases of various forms of bronchial affection treated by raising the foot of the bed, as advocated by Quincke. The patients first lie flat in bed on the back with the head turned to one side. When they have become accustomed to this position, the foot of the bed is raised from eight to twelve inches for two or three hours every morning. In some of the cases, this procedure was also made use of in the evening. The patients were enabled to raise large amounts of sputum by this method, and during the remainder of the day had little or no cough and no expectoration. The fever resulting from the retained secretions rapidly subsided and the patients increased in weight. This method is especially valuable, Schäfer says, for all cases of bronchiectasis of the lower lobes and for the long-protracted cases of bronchitis in elderly people.

Combined Intravenous Arsenic and Tuberculin Therapy.—Wendell (*Munch. med. Woch.*, 1909, lii, 13) speaks of the good results obtained by the combined treatment with atoxyl and tuberculin. He advises Koch's old tuberculin in doses of $\frac{1}{100}$ to $\frac{1}{10}$ mgm. injected intravenously every eighth day. Atoxyl in gradually increasing doses from 0.05 gram to 0.3 gram is injected every second day. Wendel believes that the tuberculin causes a hyperemia about the areas of tuberculous infiltration, and that consequently atoxyl is brought in larger amounts to these areas. Therefore the atoxyl exerts its healing action at the site of the tuberculous process. In addition, the tuberculin aids by the production of antibodies. In the cases Wendel treated by this method he noticed both an improvement in the local process and in the general condition of the patient. He says that this plan of treatment is suitable not only for hospital cases, but also for ambulant cases without fever in the first or second stages of the disease.

The Treatment of Internal Hemorrhage by Sodium Chloride.—VON DEN VELDEN (*Deutsch. med. Woch.*, 1909, v, 197) relates some interesting experiments upon animals and normal individuals, which seem to show that sodium chloride has a distinct influence in increasing the coagulability of the blood. He found that, after doses of from 5 to 15 grains of sodium chloride by mouth, there was an increase in the coagulability of the blood, reaching its maximum in from seven to fifteen minutes and persisting for from one to one and a half hours. He remarks that sodium chloride does not have this action in test-tube experiments, and attributes the increase in coagulability to a mobilization of the thrombokinase stored up in the tissues. Sodium chloride has long been a popular remedy for hemorrhage, and its beneficial effects have been ascribed to a hyperemia of the splanchnic area due to nausea. The author points out that in the doses he used, this nauseating action could largely be excluded; in fact, he tried to avoid any nauseating action. His clinical results support the experimental evidence. In 29 cases of hemoptysis he obtained excellent results by the administration of 5 grams of sodium chloride by mouth. It is interesting also to note that he obtained similar results by the use of bromides. With a recurrence of the hemorrhage, he repeats the sodium chloride or substitutes sodium or potassium bromide. In addition the bromides have a general sedative action. He keeps up the combined sodium chloride and bromide treatment in severe cases, giving from 20 to 30 grams of sodium chloride and from 12 to 15 grams of bromide during the day. The sodium chloride corrects any tendency to bromide poisoning. When it is essential not to irritate the gastro-intestinal tract, as in hemorrhage from the stomach or from typhoid ulcers, he prefers to give the sodium chloride by infusion. For this purpose he uses from 3 to 5 c.c. of a sterilized 10 per cent. solution. The intravenous method is also to be preferred, he says, to prolonged and large dosage by sodium chloride when there is a suspicion of an inefficiency of the kidneys. The author believes that this treatment is of no value in such hemorrhagic diseases as hemophilia which are not influenced by transitory increases in the coagulability of the blood.

A New Digitalis Preparation.—MÜLLER (*Münch. med. Woch.*, 1908, li, 2651) writes of the results obtained at the Heidelberg clinic by the use of digipuratum (Knoll). Digipuratum is an extract of the active principle of digitalis leaves. It may be obtained in tablet form, each tablet containing 0.1 gram, or in powder form. It is insoluble in cold water and acids, but easily soluble in dilute alkaline solutions. Müller advises its use in all cases of cardiac insufficiency, whether of valvular, vascular, or muscular origin. Its action is similar to that of other digitalis preparations, but it is lacking in most of the unpleasant secondary effects. The good effects are obtained generally after 1.2 grams given in doses of 0.3 to 0.4 gram per day. Sometimes its effects are not noticed until 2 to 2.5 grams have been given. Digipuratum is especially well borne by the stomach, and has none of the unpleasant gastro-intestinal symptoms of other preparations. When the remedy is to be used over a long period of time, 0.05 gram per day will be sufficient to continue the therapeutic effect of the drug.